

# **EXTERNAL MARKET THREATS AND ENTREPRENEURIAL COLLECTIVE ACTION IN THE EMERGENT U.S. WOOD PELLET INDUSTRY**

## **ABSTRACT**

Free riding can be a serious threat to collective action, yet this issue has not been fully examined in entrepreneurs' collective efforts to legitimate new markets. This paper probes under what conditions entrepreneurs are more or less likely to work together in order to promote a coherent collective identity in response to external threats. We propose that external threats cause entrepreneurs to choose less-costly types of collective identity promotion, and that these effects are moderated by contextual factors that shape perceived costs of collective action, such as group size and free-riding counterforces. Using the emergent U.S. wood pellet market as an empirical context, our study shows that environmental activists' targeting of forest-product manufacturers is associated with increased similarity of less-costly tactics (telling identity-congruent narratives) but decreased similarity of more-costly tactics (adopting identity-congruent names). Implications for new market legitimation, social-movement, and sustainability research are discussed.

Shon Hiatt  
**University of Southern California**

Sangchan Park  
**KAIST**

## INTRODUCTION

Entrepreneurs in new markets face lack of legitimacy that can constrain audience support and access to resources (Aldrich & Fiol, 1994). Accordingly, theory and research have consistently emphasized the importance of gaining legitimacy in the emergence and development of new markets (Tracey, Phillips, & Jarvis, 2011; Navis & Glynn, 2011; Lee, 2014; Zuzul & Edmondson, 2015; Bermiss, Hallen, McDonald, & Pahnke, 2016). Among others, organization theorists have generally conceptualized new market legitimation as a cultural-cognitive process involving the construction of a collective identity shared by entrepreneurial firms (Navis & Glynn, 2010; Glynn & Navis, 2013; Anthony, Nelson, & Tripsas, 2016). A collective identity is a convergent belief defining who new ventures are and what they do as members of the new market category that “can be strategically constructed and fluid, organized around a shared purpose and similar outputs” (Wry, Lounsbury, & Glynn, 2011: 449).

Central to the creation of a collective identity is entrepreneurs’ common efforts to project a coherent identity by making similar claims. Because audiences evaluate the identity claims of an entrepreneur in light of others, greater similarity of claims made by all ventures can paint a clearer picture of entrepreneurial groups and thus make it easier for audiences to perceive them as distinct, credible, and appropriate (Kennedy & Fiss, 2009; Lounsbury & Glynn, 2001; Santos & Eisenhardt, 2009; Battilana & Lee, 2014). It is in this context that Wry and colleagues (2011: 459) highlight the importance of entrepreneurs’ collective action, noting that “securing agreement among an initial set of group members on a defining collective identity story can lay the foundation for legitimation by generating growth and bounding expansion” (see also Kennedy, 2008).

Insofar as new markets often arise out of collective action, entrepreneurial firms likely

face free-rider problems. Studies on collective action suggest that rational actors in a group will be inclined to free ride, that is, obtain the benefits of collective efforts by other group members while bearing none of the costs (Olson, 1965; Ostrom, 1990). Free riding problems are likely to arise in the promotion of a collective identity as entrepreneurs, acting rationally, seek to obtain benefits from a well-established collective identity without making common efforts to increase identity coherence. Yet, little is known about how entrepreneurs work together in the process of enhancing collective identity coherence and under what conditions their collective action is more or less likely to arise. The paucity of research on entrepreneurial collective action in emerging markets is therefore a serious omission.

In tackling this issue, we focus on market-wide threats as a factor that can help examine variation in entrepreneurs' propensity to collaborate. Prior work suggests that external threats may affect entrepreneurial collective action in two contradictory ways. Some studies show that market threats can increase the benefits of common efforts and cause entrepreneurial firms to engage in similar actions to promote audience awareness and acceptance of the market as a whole (Barnett & King, 2008; Hoffman, 1999; Potoski & Prakash, 2013). Others, in contrast, suggest that market-wide threats can increase the costs of common efforts by limiting resource accessibility and enhancing the attractiveness of relative distinctiveness. This may in turn increase free riding and lead to less similar actions (Weber, Rao, & Thomas, 2009).

This theoretical puzzle is useful in probing how entrepreneurial collective action unfolds differently in response to the same external threat. In particular, we point to the possibility that free-riding may not simply occur in a single dimension of collective action but that it may differ along multiple dimensions of firm efforts to project a coherent identity. As an underlying mechanism, we focus on perceived cost differences in various tactics of collective action that can

eventually lead to different levels of involvement. Specifically, we propose that entrepreneurial firms facing external threats will more likely project a coherent collective identity by engaging in less-costly action such as promulgating similar narratives, while avoiding more-costly action such as adopting similar company labels that embody their core business activities.

We test our arguments in the empirical context of the emergent U.S. wood-pellet market. Wood pellet producers sought to create a distinct market category for their products by promulgating a collective identity of renewable energy producers, thereby distinguishing them from other wood-product manufacturers. However, at the same time, the wood pellet market faced market-wide threats from forest-conservation activists who sought to suppress all wood manufacturing, including wood pellet production. This led to wide variation in pellet producers' efforts to project a similar identity. We examine group-level variation in pellet ventures' identity claims by state, characterizing dissimilar claims as free riding.

This study makes a number of theoretical contributions. First, while prior work has generally painted a simplistic picture about whether or not an actor would participate in collective action (Albanese & Van Fleet, 1985; Olson, 1965; Oliver & Marwell, 1988; Hardin, 1982), our focus on cost difference in various tactics of collective action shows that free-rider problems may arise in more than one dimension of collective action and thus redirects our attention toward understanding varying levels of commitment to different types of collective action. Second, our study contributes to research at the intersection of social movements and organizations by examining how opposition movements can influence new-market creation and development. While prior studies have examined how activists can alter entrepreneurial opportunities, reduce costs of entry and construct market infrastructure (Sine & Lee, 2009; Pacheco, York, & Hargrave, 2014; York, Hargrave, & Pacheco, 2015; York & Lenox, 2014), they

have largely overlooked the role of activism in affecting the collective legitimation process. In contrast, our study uncovers the mechanisms by which opposition activism can influence collective efforts to establish coherent collective identities, thereby providing a fuller understanding of how social movement activism can influence new market emergence and establishment.

## **THEORETICAL DEVELOPMENT AND HYPOTHESES**

### **Collective Identity Promotion and Free-Rider Problems**

While the identity literature has historically conceptualized organizational identity as that which is “central, distinctive and enduring” (Albert & Whetten, 1985), more recent studies have gradually expanded its scope beyond the traditional focus on individual organizations to include sociological conceptualizations of collective identities (Glynn, 2008; Wry et al., 2011).

Collective identities are “institutionally-derived, externally-imposed, and categorical in nature” (Kraatz & Block, 2008: 264; Glynn, 2008) encompassing all members of the entire market (Kennedy, 2008, Navis & Glynn 2011, Weber, Heinze, & DeSoucey, 2008; Rao, Monin, & Durand, 2003; Khaire & Wadhvani, 2010). At its abstract level, a collective identity is the presentation of a public self, often put forth by “schemata of interpretation” or frames that enable audiences “to locate, perceive, identify, and label” the form and function of entrepreneurial groups (who they are and what they do) in a new market (Goffman, 1959: 21). Thus, a collective identity can be usefully viewed as embodying inter-subjectively shared labels and meaning. As a collective identity becomes more fully understood and accepted as necessary and appropriate (i.e., institutionalized), it may be “experienced as possessing a reality of their own, a reality that confronts the individual as an external and coercive fact” (Berger & Luckmann, 1967: 58).

More recently, scholars have argued that collective identity coherence can make a new

market category more obvious and comprehensible and thereby help external audiences to recognize nascent entrepreneurial groups in the category as distinct and appropriate (Navis & Glynn 2011; Wry et al., 2011). Enhancing identity coherence requires entrepreneurial firms to project consistent identity claims (Lounsbury & Glynn, 2001; Santos & Eisenhardt, 2009). Inconsistent, idiosyncratic identity claims paint an unclear picture of the group of organizations, making it difficult for audiences to assess legitimacy. Discrepant individual stories may even lead to “the self-promoter’s paradox” where “audiences may cynically interpret organizational tactics of public claims as clues that something is amiss” (Suchman, 1995: 599).

Given prior work’s emphasis on the importance of entrepreneurs’ common efforts, it is surprising that very little research has examined the issue of free riding. According to the theory of collective action, free riding occurs when actors perceive that they can obtain a public good without voluntarily contributing to the common efforts to produce it (Olson, 1965). Because public goods are by their nature nonexcludable, everyone including non-contributors benefit from the provision of the good (Buchanan, 1967; Minasian, 1967). While free riding has been widely acknowledged as a central problem in an array of collective action, such as national defense, environmental protection, law enforcement, and social movements (Oliver, Marwell, & Teixeira, 1985; Jenkins, 1983), scholars more recently have extended research on free-riding to various organizational settings. For instance, Bartley (2007, 2009) showed how an interest among sweatshops to develop shared labor standards was not sufficient to overcome their tendency to free ride. King and Lenox (2000) highlighted the difficulty in establishing effective self-regulation in a study of the Chemical Manufacturers Association’s Responsible Care Program. Similarly, Yue (2016) noted a coordination problems among bankers during the financial Panic of 1907.

The theory of collective action originally proposed two propositions of free-riding: The strong free-rider thesis that conceptualizes the provision of public goods to be zero (Brubaker, 1975), and the weak free-rider thesis that conceptualizes the provision of public goods to be greater than zero (i.e., suboptimal) (Samuelson, 1954). The strong free-rider thesis focuses on ideal-typical conditions under which members in a group, acting rationally, do not provide any amount of a public good. A weak free-rider thesis, however, takes a more realistic position by suggesting that while most members in a group make no contribution, some individuals with special interest in the public good in fact do. As a result, the group will obtain a suboptimal amount of the public good, or “less of the good than it would if it were a single individual making an economic judgment on the optimal amount to provide” (Marwell & Ames, 1979: 1138). In this sense, the weak free-rider hypothesis is often referred to as the suboptimal proposition, which we use as our primary source of theory.

Besides the suboptimal proposition, prior work on organizational free-rider problems has included two additional propositions that can influence collective action: Group size and counterforces (Albanese & Van Fleet, 1985; Barry & Hardin, 1982). The group size proposition suggests that free-riding is more likely to arise as group size increases, thereby reducing the total amount of public good provided by group members. The counterforces proposition notes that free-riding is less likely to arise in the presence of coercion, special incentives, and other conditions that act as counterforces to the free-riding tendency.<sup>1</sup>

We suggest that as long as a legitimated collective identity is a non-excludable public

---

<sup>1</sup> A large body of research and reviews have generally provided support for the propositions, while others noting a varying level of support, from strong to weak or mixed (Marwell and Oliver, 1993; Hardin, 1982; Olson, 1965; Groves and Ledyard, 1977; Baumol, 1952).

good, inherently shared by both contributors and non-contributors, the theory of collective action and its main propositions outlined above are useful in probing entrepreneurial collective action. Because entrepreneurs in a group can enjoy the benefits of collective identity established by others, they have less incentive to engage in costly action to promote identity coherence. Yet, if ventures decide not to work together to engender identity coherence but instead free ride by taking individual actions that best serve their self-interests, the group suffers from suboptimal provision of the public good (i.e., collective identity coherence). In the following, we extend the aforementioned line of reasoning to formulate our key predictions.

### **External Threats and Identity Coherence**

Following baseline arguments derived from the logic of collective action, one may posit that new ventures' common efforts to promote identity claims should be unlikely to arise as a result of free-rider problems. However, scholars have suggested that entrepreneurs' common efforts to establish coherent identities may significantly differ especially in the presence of external threats such as market-wide opposition activism. We define market-wide opposition activism as the use of direct action by social movements to suppress a market category's establishment. Unlike firm-centered activism, market-wide activism seeks to target and stigmatize the business operations of all firms in a particular market category (Tracey and Phillips, 2016), such as the anti-nuclear movement's targeting of all nuclear-power producers (Gamson & Modigliani, 1989) and the temperance movement's targeting of all alcoholic-beverage makers (Hiatt, Sine, & Tolbert, 2009).

On one hand, some studies suggest that external threats such as market-wide opposition activism may motivate nascent producers to unite in their common responses to enhance identity coherence (Barnett & King, 2008; Potoski & Prakash, 2004, 2013). For instance, by engaging in



private political tactics such as protests and sit-ins or public political tactics such as testifying in Congressional hearings, Hiatt and colleagues (2015) found that climate change activists catalyzed coordinated response efforts among certain oil and gas companies. In another example, Hoffman (1999) found that chemical firms similarly responded to intense environmental pressure by reporting environmental data and promulgating similar rhetoric that painted win-win scenarios of working with environmental NGOs. Additionally, King and Lenox (2000) found that under pressure from environmental stakeholders chemical companies were inclined to demonstrate their adherence to common environmental principles.

On the other hand, other studies suggest that external market threats can make individual firms more sensitive to their self-interests and less eager to unite, thereby reducing common efforts aimed at enhancing identity coherence (Weber et al. 2009). For example, the temperance movement's success in limiting resources to breweries in the late 19th and early 20th centuries created among breweries a greater "competition in trade, anxiety to increase the output of manufactured product, [and] feelings of retaliation against competitors in business" (USBA 1909: 144). Additionally, the anti-GMO movement's targeting of the European biotechnology market "reduced the political will and coalition-building ability of groups identifying strongly with the technology" (Weber et al. 2009: 116), thereby engendering disunity and a greater focus on individual differences. As prior work shows, external threats such as those from social activists can limit resource accessibility and thereby increase the value of relative desirability among other firms. The pressure to differentiate may make it difficult, if not impossible, to effectively coordinate common efforts and enhance the coherence of identity claims (Navis & Glynn 2010; Wry et al. 2011).

We address these contradictory findings by suggesting that collective action may not

always occur in a single dimension of tactics but that it may unfold differently along multiple dimensions of firm efforts to project a coherent identity. Indeed scholars have acknowledged that firms project their identity differently (Navis & Glynn 2011; King, Clemens, & Fry, 2011). On one hand, ventures can promulgate identity claims through linguistic framings such as narratives, stories, and analogies. For instance, Lounsbury and Glynn (2001: 545) suggest that entrepreneurial stories “facilitate the crafting of a new venture identity that serves as a touchstone upon which legitimacy may be conferred by investors, competitors, and consumers.” Narratives and stories can shape how audiences perceive and understand the collectively presented identity of new ventures (Wry et al., 2011; Rindova, Dalpiaz, & Ravasi, 2011; Vaara & Monin, 2010). On the other hand, ventures can also make identity claims in the form of adopting names and labels that describe the defining features of new market categories. As Glynn and colleagues suggest, names are “claims about an organization’s identity that locate an organization in institutional space, as a member of an organizational field...and cue its distinctiveness for quality, service, or products” (Glynn & Marquis, 2006: 226; see also Glynn & Abzug, 1998, 2002).

We argue that the perceived costs of executing diverse tactics of collective action vary significantly, and that the perceived differences can affect entrepreneurial decisions to work together to enhance identity coherence. In general, verbal actions such as narratives, stories, and analogies are perceived as less costly than nonverbal actions, such as formal change in organizational names because they can address legitimacy problems while not necessitating substantive change in business practices and labels. For example, in a study of the California cattle industry facing scrutiny from social movements, Elsbach (1994) found that verbal accounts that incorporated normatively acceptable claims helped protect the industry’s legitimacy during

the crisis, notwithstanding the industry's refusal to alter its practices. This finding is also consistent with Suchman's (1995: 588) proposition that "carefully chosen displays of symbolism may circumvent the need for substantive change entirely," which is likely more costly.

Inasmuch as opposition activists present a significant threat to all entrepreneurs in a new market, the relative gain of making common efforts to address the threat will generally increase, causing entrepreneurs to respond in similar ways to cultivate positive perceptions and deflect audience scrutiny (Barnett & King 2008). At the same time, however, activism-induced threats can also foster negative environmental conditions that limit resource accessibility, reduce profitability, and increase risk sensitivity (Briscoe & Safford, 2008; Hiatt et al., 2015), which can induce ventures to avoid risky decisions that may lead to loss and instead favor less costly options (Cyert & March, 1963; Shapira, 1986; Chattopadhyay, Glick, & Huber, 2001). Thus, ventures must address simultaneous pressures to collectively enhance identity coherence while minimizing costs of the collective action. These pressures, we believe, cause entrepreneurs to put their efforts towards less-costly tactics (i.e., narratives). In sum, we propose that external threats will increase common efforts in verbal claims and thereby lead to an increased use of similar narratives among new ventures.

*Hypothesis 1: External threats will increase the similarity of less-costly tactics (identity-congruent narratives) among ventures.*

In contrast, we argue that external threats will have the opposite effect on more-costly tactics of collective action such as adoption of identity-congruent names. An organization's name encodes central features of its identity and is readily used by audiences to identify it as a legitimate member in a particular market category (Glynn & Azbug, 2002; Granqvist et al., 2013; Hsu and Hannan, 2005). Lee (2001) found, for example, that technology companies readily

added “.com” suffixes to their names to draw audience attention to their internet category claims. Likewise, Ingram (1996) found that hotel-chain franchisees chose hotel names that indicated membership in the parent chain of hotels. These studies suggest that organizational names are not simply passive identity markers but are proactive claims to a collective identity and that an organization’s choice of name signals the extent to which an organization seeks to identify with other members of its category.

While the choice of organizational labels is generally driven by differing name preferences of organizational decision makers, we suggest that the individual preferences may be reshaped by market-wide forces which reduce the adoption of isomorphic labels (Glynn & Marquis, 2006). More specifically, external threats from opposition activism can discourage both new entrants and existing firms from adopting identity-congruent names as a means to enhance collective identity coherence. First, new entrants will likely perceive the cost of adopting similar labels to be particularly high. As long as market-wide threats such as opposition activism limit resource accessibility and intensify competition in a market category, entrepreneurs in the category will be more strongly motivated to establish their unique character and pursue differentiation strategies (Navis & Glynn, 2010; Grodal, Gotsopoulos, & Suarez, 2015). In this situation, a venture will perceive adopting a similar name to be risky since it may be classified into a group of non-differentiated members and thus reduce its relative distinctiveness vis-à-vis its rivals. In a study of poorly performing funeral homes, for instance, Chuang and Baum (2003) found that funeral homes facing negative market pressures were more likely to differentiate themselves from other competing franchises by selecting organizational labels that did not associate them with the funeral-home chain. Second, existing firms facing external threats will also likely disfavor the adoption of new names. As Lee (2001) highlights, “Names like Disney

and Coca-Cola embody history, culture, brand identity, specific businesses, reputation, and other characteristics that require resources and years to develop.” Thus, changing a name represents significant disruption in the identity codes, or the core features by which audiences gauge legitimacy and reputation (Hsu and Hannan, 2005). Additionally, because audiences generally expect firm names to reflect its central attributes (Fombrun and Shanley, 1990; Glynn and Abzug, 1998) the adoption of a new name by existing firms may require subsequent change in the formal structure and business activities to align with the labels, which can incur added costs. Taken together, higher perceived costs of identity-congruent labeling under external threats are likely to shape organizational choice upon and after entry thereby reducing the similarity of business names.

*Hypothesis 2: External threats will decrease the similarity of more-costly tactics (identity-congruent names) among ventures.*

### **Contingencies of External Threats on Identity Coherence**

The two key hypotheses extend the suboptimal proposition by suggesting that external threats such as activist-driven opposition targeting a new market shapes entrepreneurial commitment to collective action differently according to varying levels of perceived costs associated with the action. We further strengthen our arguments by examining the other propositions regarding group size and counterforces (Albanese & Van Fleet, 1985; Barry & Hardin, 1982). If our proposed mechanism indeed operates, we should expect that the main effects will differ according to a set of factors that reshape how entrepreneurs perceive the costs of various tactics including making similar narratives and adopting similar names. In the following section, we explore the moderating effects of two related variables: the size of the entrepreneurial group and the local presence of leading identity advocates.

*Group size.* An important factor that could moderate the influence of external threats on organizational free riding is the size of the local entrepreneurial group. Olson (1965) suggests that the free-riding problem makes larger groups less effective. In his own words, “the total costs of the collective goods wanted by large groups are large enough to exceed the value of the small fraction of the total benefit that an individual in a large group would get” (Olson, 1965: 49n); as a result, “[t]he larger a group is, the farther it will fall short of obtaining an optimal supply of any collective good, and the less likely that it will act to obtain even a minimal amount of such a good” (Olson, 1965: 36).

Since Olson (1965), more recent studies have raised a variety of critical issues suggesting that the group size thesis holds only under specific conditions (Chamberlin, 1974; Hardin, 1982). For instance, Oliver and Marwell (1988) suggest that free riding increases with group size if the cost of supplying a good increases proportionately with the number who enjoy it, a condition known as zero-jointness of supply. In situations of zero-jointness of supply, group size leads to a decrease in the expected value of a contribution, which can discourage individuals from taking collective action. In contrast, if a good has a fixed cost in nature, larger groups may exhibit greater collective action because the benefit of the good does not decrease with more members (Marwell & Oliver, 1993).

This line of debate regarding costs and collective good provision in a large group provides important insights into entrepreneurial collective action, which by nature arises in groups of various sizes. Given that collective identity is a collective good, a venture’s consumption of the identity does not directly diminish it. Still, the cost of projecting a similar identity is likely to rise with the number of entrepreneurial firms, particularly when they share the same resource niches at the local area and thus have to engage in direct competition. As long

as competitive environment favors relative distinctiveness, individual ventures in the same local area may perceive it costly to be the same (Baum & Singh, 1994; Deephouse, 1999). Scholars have shown that the dynamics of local competition and differentiation can also be reflected in organizational identity claims (Wry et al., 2011). For instance, Navis and Glynn (2010) found that once the satellite radio category became legitimated, the identity narratives that described the companies changed from focusing on what they had in common to what made them different.

Extending this line of logic to our theoretical context, we argue that if the cost of being the same in terms of identity claims increases proportionately with the number of ventures that take the same action in a local area, it is likely that larger groups will be less likely to make similar identity claims than smaller groups. In other words, group size can reshape how entrepreneurial firms work together in response to external threats by negatively moderating the relationship between opposition activism and the similarity of less-costly and more-costly identity claims. We predict that the hypothesized positive effect of external threats on similarity of less-costly tactics will be weaker as the group size increases. A larger group size will increase the perceived costs associated with projection of a collective identity by causing ventures to more regard other ventures in the same local area as direct competitors. Similarly, we predict that the hypothesized negative effect of external threats on similarity of more-costly tactics will be strengthened in large groups. Ventures will be less likely to adopt similar business names as larger group size intensifies ventures' concerns about competition. Therefore, we propose:

*Hypothesis 3: Larger group size will reduce the positive impact of external threats on the similarity of less-costly tactics (identity-congruent narratives).*

*Hypothesis 4: Larger group size will enhance the negative impact of external threats on the similarity of more-costly tactics (identity-congruent names).*

**Counterforces: Leading identity advocates.** Another factor that could moderate the

influence of external threats on the coherence of entrepreneurial collective action is local coordination by leading members in the emerging market. While extending Olson (1965), scholars have examined coercion (e.g., governmental intervention through legal mandates, management policies, other directives and controls) and special incentives (e.g. personal recognition, task uniqueness, promotion and bonus) as sources of counterforces that can discourage free-riding (Albanese & Van Fleet, 1985). More recently, scholars have also redirected their attention to the role of particular group members in providing a public good or directly counteracting free-riding. For example, Oliver and Marwell (1988: 6-7) suggest that the problem of collective action is “whether there is an organization or social network that has a subset of individuals who are interested and resourceful enough to provide the good when they act in concert, and whether they have sufficient social organization among themselves to act together.” In other words, collective action can arise with a small subset of highly interested and resourceful actors who are socially connected to one another (Marwell & Oliver, 1993).

Extending this line of logic, we emphasize the role that salient, socially connected producers play in encouraging ventures to advocate a collective identity. Characterized by their longevity, size, or centrality in trade associations, these leading producers have the resources to act as identity champions by constructing core components of collective identity such as labels and definitions that reframe who they are and what they do in the new market (Wry et al., 2011). These can be incorporated into templates of narratives and business names. Leading producers can also build upon their resources and central position in a trade association to urge other producers to adopt the initial templates in response to market-wide threats. This process of new identity construction and dissemination constitutes the most important, and arguably most costly, stage of collective identity establishment. Inasmuch as leading producers take this first step in



collective identity creation, they should reduce the perceived cost barriers that prevent other producers from making similar identity claims. Taken together, the local presence of leading identity advocates counteracts free-riding and thus has the potential to affect the relationship between market-wide threats and firm tactics.

We predict that the hypothesized positive effect of external threats on the similarity of less-costly tactics of collective action (i.e., identity-congruent narratives) will be stronger in the presence of leading producers. These producers not only reduce initial costs associated with the establishment of collective identity by providing templates of entrepreneurial storytelling, but also augment the diffusion of stories by persuading other producers to use similar narratives in response to external threats. Similarly, we also predict that the hypothesized negative effect of external threats on similarity of more-costly tactics such as adopting similar names will be weakened in the presence of leading producers.

*Hypothesis 5: Greater number of leading identity advocates will enhance the positive impact of external threats on the similarity of less-costly tactics (identity-congruent narratives).*

*Hypothesis 6: Greater number of leading identity advocates will reduce the negative impact of external threats on the similarity of more-costly tactics (identity-congruent names).*

## **U.S. WOOD PELLET INDUSTRY: QUALITATIVE FINDINGS**

### **Historical Origins of Wood Pellet Production**

Wood-pellet producers trace their origins to 1933, when the Potlatch Lumber Company of Lewiston, Idaho, developed a technology to produce low-moisture logs and briquettes from sawmill shavings. Later technological advances allowed for much smaller wood pellets. Briquettes and pellets are made by compacting wood shavings into dense cylinders with a moisture content of 8 to 12 percent. The result is a product with almost the same energy content

per unit volume as coal; it burns hotter and more completely than wood, producing no smoke and very little ash or air particulates (Spelter & Toth, 2009). However, market exploitation of this technology did not occur until the late 1970s, when rising energy costs increased demand for alternative methods of heating homes and commercial buildings; a number of entrepreneurs in the forest-products arena founded wood-pellet companies using Potlatch's technology. The market grew exponentially over the next two decades, from a yearly production of 1 million metric tons in the late 1990s to over 6.2 million by 2009 (ibid). Most wood pellet ventures were small (well under 100,000 metric tons per year), and the majority of their products were sold for commercial and domestic heating; a small percentage was used as feedstock for electricity production.

### **Collective Identity Formation**

Early entrant producers realized that an important factor in creating a new market category for wood pellets was establishing a coherent collective identity that showcased the market's unique renewable energy qualities. For that purpose, these leading-member firms formed a non-federated trade association in 1983 (the Fiber Fuels Institute, which later changed its name to the Pellet Fuels Institute, hereafter FFI/PFI) to coordinate identity framing efforts among pellet producers and to distinguish wood pellet producers from other wood manufacturers. The trade association's official mission was to represent the "clean burning technology of renewable bio-mass energy sources" and advance the "promotion of fiber and densified (pellets) fuel technology that will help solve global ecological problems through the utilization of locally renewable energy sources" (FFI/PFI, November 1993). "Done correctly," the FFI/PFI leadership asserted, "we feel our industry could be recognized as one of the most important in the recycling of our natural resources" (FFI/PFI, November 1988).

In an effort to coordinate member firms' linguistic framing and promotion of their collective identity, the trade association's leadership distributed press-release templates, talking points, and promotional literature and videos that described pellet ventures as renewable-energy producers and their products as sustainable energy sources that decreased carbon emissions. Pellet producers used these templates in their press releases and interviews with media outlets. For example, some talking points stressed "the unique advantages of pellet appliances and our renewable, environmentally friendly fuels" (FFI/PPI, October 1993). Others wanted producers to state that the industry "is recycling carbon rather than contributing to the growth of CO<sub>2</sub> in the atmosphere" (FFI/PFI, February 1990). Some narratives used comparisons to other energy sources such as this one shared by a producer in the trade association bimonthly newsletter:

I always include a description of the fuel, its history, its present condition, and a look into the future. I like to explain that pellet fuel provides an excellent heating alternative with one of the lowest impacts to the environment, and I like to compare this to the other energy options available: Fossil fuels (high costs of exploring and retrieving them); Crude oil (the balance of trade problems with importing it and destruction caused by spills); Petroleum products (CO and CO<sub>2</sub> emissions); Nuclear power (creates a deadly waste); Hydro-electric dams (destroy northwest salmon runs) (FFI/PFI September 1995).

Some firms issued identity narratives and adopted company and product labels and names that highlighted the market's sustainable and renewable energy features while others did not.

### **External Market Threats: Forest Conservation Activism**

The leadership's efforts to encourage conformity were complicated by increased pressure from forest-conservation groups, which sought to stop all manufacturing of wood fibers including wood pellet production. Beginning in the 1970s, forest-conservation groups such as Earth First! and The Wilderness Society mobilized for the purpose of preventing trees from being harvested and processed; they sought to stigmatize loggers, sawmills, and wood-pellet producers

as destroyers of private and public woodland. Forest conservationists engaged in activist tactics ranging from protests, litigation, and tree sitting to more aggressive actions like tree spiking and destruction of company assets to prevent wood harvesting and manufacturing.<sup>2</sup> In particular, the passage of numerous environmental laws in the 1970s gave conservation groups more opportunities to legally contest timber harvesting and manufacturing (Malmshemer, Keele, & Floyd, 2004). For instance, pellet producers pinpointed the Endangered Species Act as a major political opportunity structure used by forest-conservation groups to file lawsuits to prevent wood harvesting and pellet manufacturing. In one newsletter, the FFI/PFI's president reported on a ruling about the Mexican spotted owl, a bird listed on the endangered species list:

One of the scariest stories circulating concerns the Mexican spotted owl issue near Rob Davis' operation by Flagstaff, AZ. A recent federal court injunction [on forest harvesting] has nation-wide implications. Judge Carl Muecke has ruled that studying where the owl actually has been found is not enough; you have to study where he might want to live as well (FFI/PFI, 1995: 4).

These groups viewed wood pellet producers as members of the forest products industry, notwithstanding pellet producers' efforts to differentiate and create a new market identity for themselves. Protests, blockades, and litigation compromised the ability of pellet ventures to obtain raw materials and sell their products, and thereby presented a real threat to most pellet ventures in the emerging market.

The reluctance of some pellet producers to conform to the collective identity frustrated FFI/PFI leadership. "We need you to work together to improve our industry. Please do your part now!" exclaimed the CEO of one leading firm and member of the FFI/PFI governing board.

---

<sup>2</sup> Tree sitting entails sitting in the upper reaches of a tree to prevent it from being harvested. Tree spiking consists of hammering a metal rod or other sharp object into the base of a tree trunk to discourage harvesting by endangering loggers.

Another pellet CEO pleaded: “Our long term success may very well depend on action taken now. We need to organize ourselves more aggressively.” The presidents of the FFI/PFI’s governing board declared: “Now is the time for unification not fragmentation. It’s time to lay aside our individual interest and look at where our industry can be if we all work together and the consequences if we don’t” (FFI/PFI, 1988, 1990).

Most producers that ignored the leading firms’ pleas to work together were located in states without leading-identity advocate representation, and many of them cancelled their trade-association membership because they felt that expending resources to towards a common industry goal would yield them very little benefit. For example, one producer stated in an interview with us that “the PFI did nothing in New Mexico” to alleviate the issues stemming from forest conservation activism. Inaction by some producers spurred the following rallying cry from the executive director of the FFI/PFI for pellet producers to come together:

Yes, I will listen; I will even be truly sympathetic to the stories that sound a lot like many a country western ballad, a ‘somebody did somebody wrong song.’ I do care. But you know what? I care more about taking advantage of the benefits of marriage rather than the lost opportunities of bachelorhood....We occasionally fought amongst ourselves, regularly fought our national and state government for a better system, and as to be expected had more than our share of fights for turf between members....We will move on and we will service our membership better in the future than we did in our separate pasts” (FFI/PFI, February 1994).

In sum, we believe that the emerging wood pellet market is a suitable setting in which to explore how external market threats can influence the ventures’ efforts to collectively enhance their identity coherence.

## **METHODS**

### **Data Description**

This study examines the impact of external market threats on U.S. wood-pellet producers’

efforts to promote a coherent collective identity by state-year. We focus on the establishment of a collective identity at the state level because it allows us to analyze the variance in similarity of identity-congruent narratives and firm names among producers in a particular geographic area who face market threats that significantly vary by state. The window of observation begins in 1975 and ends in 2008. The sample consists of data from all 234 U.S. biomass pellet plants in 41 states. During this period 196 plants were established, 85 failed, and 111 were still operational when the period ended. Upon failure, organizations were dropped from the sample; upon founding, new organizations were added.<sup>4</sup>

Our data on pellet firms came from reports generated by the U.S. Forest Service and by the pellet trade association, the FFI/PFI. We also obtained archival materials from the FFI/PFI, including bimonthly member newsletters, conference proceedings, and technical reports dating from 1983 (when the association was founded) until the present. Data on firm narratives came from PR Newswire and Business Wire press-release databases found in Lexis-Nexis. Using these qualitative sources, we identified and quantified the similarity of identity-congruent narratives and business names. We constructed state-level measures in order to capture whether pellet producers at the local level coordinated their efforts so that their collective-identity legitimation efforts were similar to those within the local sphere of comparison. In doing so, we are able to enhance consistency between theory and empirical analysis, capture the collective behavior of firms, and account for geographical variance in external pressures associated with social activism (Marquis & Lounsbury, 2007).

---

<sup>4</sup> Thirty-seven plants engaged in forestry operations, such as sawmills and woodworking; twenty-six plants were associated with non-forestry business operations, such as agribusiness and general retail; and the remainder were stand-alone pellet producers. Only one pellet venture in our sample existed before 1975; it was founded in 1961. Because our area of focus was on the projection of a coherent collective identity in a given state, we treated the three mergers that occurred during the study period as continual plant operations.

## Dependent Variables

The dependent variables are the similarity of identity-congruent narratives and organizational names, two tactics of collective action that significantly differ in terms of costs of implementation. We captured the use of *similar identity narratives* by categorizing firm press releases used to describe their identity. We then created a proportion variable by dividing the narratives that proclaimed a renewable energy identity by all types of identity narratives, following previous research (Navis & Glynn, 2010). For instance, in a study of how workstations became a distinct category of computing machines, Kennedy (2008) showed that news stories publicizing workstation manufacturers' assertions (in press releases) that their products represented a new category brought greater visibility and legitimacy to the workstation category. The variable captured the extent to which pellet producers in a given state-year projected a coherent and consistent (homogenous) narrative to describe what they are and do. Leading pellet producers requested that pellet producers describe themselves as renewable energy producers and their products as sustainable and/or renewable energy sources. For example, following the leading firms' advice, the pellet producer BioMaxx Inc. described itself in a press release as a "clean-tech industry" and its product as "clean and renewable energy that reduces our independence on foreign oil." We categorized all press releases based on how they described their identities. The categories included renewable energy producers, forest product manufacturers or agriculture producers, and wood heating producers.

We operationalized *similar business names* by categorizing firm names based on three categories: sustainability or renewable energy, forest product, and all other names. Similar to the verbal narratives, we then created a proportion variable by dividing the number of firms with sustainable or renewable energy names by the total number of firms in a given-state year.

Examples of identity-congruent names include Biomass Energy Corp, Renewable Energies, Treecycle, Alternative Fuel Corp., and Vermont Biomass Energy Company. Names of companies that fall in other categories include Pellet America Corp., Mr. Pellet, California Pellet Mill, Bitterroot Timber Products, and Belgrade Wood Products. Prior research has argued that heterogeneous organizational names and labels can make it difficult for audiences to identify the common identity attributes that delineate a group of organizations (Romanelli & Khessina, 2005). In contrast, similar or homogeneous business names and labels can increase collective-identity coherence by allowing audiences to concentrate on the core identifying features. Pellet producers whose names reflected the attributes of environmental sustainability and renewable energy are more likely to be seen by audiences as having a distinct identity.

### **Predictor Variable**

Forest conservation groups sought to stop all economic use of tree fibers including wood pellet production, presenting a market-wide threat. We operationalized *external threats* using a five-year moving average of total lawsuits filed to halt timber harvesting and manufacturing in a state-year to take into account the time lag in lawsuit effects. We used lawsuits for a couple of reasons. First, this was a common and effective public political tactic used by forest conservation activists to contest the emerging market (Malmsheimer et al., 2004). Second, and more importantly, these suits affected the entire wood-manufacturing ecosystem and not just one pellet firm because they stopped the harvesting and manufacturing of wood. Pellet producers are dependent upon wood shavings and chips from upstream harvesters and manufacturers. Thus, lawsuits presented a market-wide threat that could shape entrepreneurial collective action in the emerging pellet market. Nearly every lawsuit is appealed which can take 3 to 6 years to settle (Malmsheimer et al., 2004). However, during the entire litigation process, moratoriums are



generally put on the harvesting and manufacturing of timber products, thereby providing conservation groups benefits regardless of the final legal outcome. As a robustness check, we also tried 3 and 7-year moving averages, and the alternative measures did not affect the results.

### **Control Variables**

We controlled for a number of economic and competitive factors that could affect producer growth and performance. Following previous studies (Sine & Lee, 2009), we included *gross state product per capita* and *population* to account for broader economic conditions. Information on state population came from the U.S. Census Bureau; data on gross state product were obtained from the U.S. Department of Commerce. We also controlled for *group size* using the number of active pellet producers in a given state-year. We use the state as a natural boundary to capture meaningful discontinuity across the organizational field because forest conservation lawsuits were regionally focused, targeting targeted wood fiber manufacturers and harvesters in a given state. Thus, pellet producers' response will likely vary depending on the number of other peers also facing the same threat. We controlled for total amount of available timber that can be used for wood pellet production in cubic board feet (*state timber volume*). Additionally, diseased wood, which has little economic value beyond feedstock for combusive purposes, provides pellet producers a source of low-cost feedstocks; thus we controlled for the acreage of dead and *diseased forests* by state-year (Spelter & Toth, 2009). These variables came from the United States Department of Agriculture.

Prior research has found a firm's access to resources can affect organizational responses to social movement activism (McDonnell & King, 2013). Consequently, we constructed a general measure of firm *profitability*. Because producers didn't reveal their financials, we estimated producer profitability by subtracting the state-average, per-ton retail price of wood

pellets from the state-average, per-ton retail price of sawdust, the main raw-material source for wood pellets, in a given year. According to FFI/PFI reports, raw materials were pellet producers' largest variable expense; thus an adequate supply of low-cost, low-competitive resources can positively affect producer performance. These data came from bimonthly economic reports generated by the FFI/PFI.

Given the potential influence counterforces may have on influencing entrepreneurial collective action in an emerging market category, we controlled for the number of *leading identity advocates* in a state that actively engaged in framing a coherent collective identity. We defined these as producers that took part in the governance of the FFI/PFI. These organizations were typically the oldest and those that had played a critical role in the establishment of the trade association. Only leading firms that reported to have promoted and exemplified the collective identity were counted as leading identity advocates. The FFI/PFI bimonthly newsletters and annual conference proceedings identified leading firms that promoted the collective identity.

We also controlled for potential demand for wood pellets by including heating alternatives and ambient temperatures in the analyses. The largest market for wood pellets during this period was the home-heating market, in which wood pellets competed with electricity, fuel oil, and natural gas. Due to price differentials, pellets were more likely to displace electricity and fuel oil, which are generally more expensive per BTU than natural gas (Folk & Govett, 1992). Thus we controlled for *natural-gas consumption per capita* by state-year. Natural gas and electricity data came from the U.S. Department of Energy's Energy Information Administration. Because colder weather increases demand as customers burn more pellets to generate heat, we controlled for local *winter temperature* by averaging monthly temperatures in November and December of the previous year with monthly temperatures in January and February of the current

year to generate a winter temperature by state-year. These data came from the U.S. National Oceanic and Atmospheric Administration. Finally, we also added state-fixed effects.

### **Analysis**

To test whether and how social activists influence the collective-identity legitimation process of producers, we conducted a seemingly-unrelated multivariate regression analysis that is used in research to measure endogenous dependent variables (Zellner, 1962).<sup>5</sup> Unlike multiple regression, multivariate regression jointly regresses several dependent variables on the same independent variables, producing a model with adjusted coefficients and standard errors for the two equations. Multivariate test statistics (Wilks' lambda, Pillai's test, Lawley-Hotelling trace, and Roy's largest root) indicated that all equations in each model were statistically significant. For all analyses, the data were arrayed in a state-year matrix. All predictor variables and interaction terms were lagged by one year. Multicollinearity tests revealed that variance-inflation factors in all three analyses were less than 2.70, indicating an acceptable level of multicollinearity (Afifi et al., 2004).

-----

Insert Tables 1–2 about here

-----

## **RESULTS**

Descriptive statistics and bivariate correlations appear in Table 1. The results of the multivariate regression analysis of similar identity narratives and business names appear in Table 2. Turning to Table 2, a number of control variables were significantly associated with the efforts of

---

<sup>5</sup> For robustness, we also ran individual Tobit analyses as well as a seemingly-unrelated multivariate Tobit analysis with state fixed effects and the same variables and found similar results.

pellet producers to frame a coherent collective identity. Larger group size, state timber volume, state population and diseased forests in a state had a positive influence on similar identity narratives in all models. Turning to the use of similar business names, larger group size was positively impacted the use of similar business names, while greater gross state product per capita had the opposite effect.

In hypothesis 1, we proposed that external market threats from activists would increase the use of similar identity narratives by entrepreneurs. The results in Model 2 provide support for our argument. A one-standard deviation increase in opposition activism increased the similarity of identity narratives in a state by 87 percent. In hypothesis 2, we argued that external market threats would decrease the similarity of entrepreneurs' business names. The results in Model 2 support our argument. A one-standard deviation increase in opposition activism decreased similarity of business names by 217 percent. The main effects of external threats were consistent across all models.

In hypotheses 3 and 4, we argued that the influence of external market threats on the coherence of identity claims will be moderated by group size. The results in Model 3 offer support for hypothesis 3 but not hypothesis 4. Larger group size negatively moderated the main effect of external threats on similar business narratives; however, while negative, the moderating effect of group size on similar identity names did not reach statistical significance. In hypotheses 5 and 6, we argued that leading identity advocates would positively moderate the influence of external threats on the similarity of narratives and firm names. The results in Model 4 offer support for our hypotheses. A greater presence of leading identity advocates positively moderated the influence of external threats on similar identity narratives and on similar business names. Figures 1 to 4 illustrate the interactions of group size and leading identity advocates.

## DISCUSSION AND CONCLUSION

Building upon studies of collective action and free riding (Olson, 1965; Oliver & Marwell, 1988) we explore an understudied question of how entrepreneurial groups engage in common efforts to legitimate a new market in response to market-wide threats such as opposition activism. We presented a framework that distinguishes between more-costly and less-costly tactics of collective identity promotion (telling identity-congruent narratives and adopting identity-congruent firm names, respectively) and predicted that entrepreneurial collective action would unfold differently between the two types of firm tactics in response to the same external threats. We found that external market threats from opposition activism led to increased similarity of less-costly tactics (narratives), but led to reduced similarity of more-costly tactics (business names).

These results confirm our argument that the perceived cost may serve as a deciding factor that shapes entrepreneurial collective efforts, and thus represent a meaningful extension of existing theories of collective action. Olson suggested that “[t]hough all of the members of the group therefore have a common interest in obtaining this collective benefit, they have no common interest in paying the cost of providing that collective good” (1965: 21). In this paper, we suggest that the cost of providing a collective good may differ according to various tactics. Because identity-congruent narratives represent a cost-effective tactic that requires relatively fewer material resources than identity-congruent names to implement, entrepreneurial firms are likely to perceive the hurdle for engaging in common efforts to be relatively low. The analysis of moderating effects also strengthens our cost arguments by demonstrating how the perceived costs of various tactics for collective action can be reshaped by a set of factors, such as the group size and the local presence of leading identity advocates.

In relation to the conventional approach, in particular those guided by Olson (1965), to collective action, the main effect of group size in our analysis is worth further discussion. In the collective action literature, group size has been a central topic for scholarly debates (Albanese & Van Fleet, 1985; Marwell & Ames, 1979; Olson, 1965; Oliver & Marwell, 1988), revolving around Olson's original thesis that free riding would most likely occur in a larger group. Notwithstanding, a number of more recent studies have criticized the group size thesis (Chamberlin, 1974; Hardin, 1982; Marwell & Oliver, 1993; Sandler, 1992). For instance, Oliver and Marwell (1988) suggest that Olson's thesis holds only when the cost of a good increases proportionately with the number who share in it. If the cost associated with providing a good is fixed regardless of how many members use it, the opposite should result and there should be less free riding. As the main effect of group size was positively associated with similar business names, our results offer some support to the critics offered by later work (see also Hardin, 1982: 38-49; Marwell & Oliver, 1993: 38-57).

Our study highlights the crucial importance of leading producers for enhancing collective identity (Wry et al., 2011). As the literature on collective action suggests, a subset of resourceful and socially connected producers are the key to collective action (Oliver & Marwell, 1988, 1993). Leading pellet firms in our setting had both ability and willingness to coordinate collective action. On one hand, they were capable of coordination because their resources and central position in a trade association gave them a considerable persuasive power to lead other firms. On the other hand, their role as the group's de facto leaders made them the most visible targets of external threats driven by opposition activists. Accordingly, they were more strongly motivated to make larger contributions to address such threats. Our results provide support on this line of logic. Future research may seek to examine factors that might enhance or compromise

their ability and willingness. For instance, in markets characterized by low trade-association membership, it might be difficult for leading organizations to harness support. Alternatively, peripheral organizations' reluctance to follow leading firms' advice might undermine efforts to craft an alternative collective identity.

This paper makes a number of theoretical contributions. First, this study contributes to research on new-market legitimation (Navis & Glynn, 2011; Zuzul & Edmondson, 2015). While the emergence and development of new markets critically depends on coordinated efforts of entrepreneurs to make their identity obvious, coherent, and comprehensible to audiences (Kennedy & Fiss, 2009; Lounsbury & Glynn, 2001; Santos & Eisenhardt, 2009), very little is known about actual collective efforts of entrepreneurial firms. It is in this sense that scholars have called for research that can answer such questions as: "Under what conditions are entrepreneurs more likely to act collectively, developing organizations and other arrangements that support new enterprises, and what are the conditions under which such collective action is effective?" (Tolbert, David, & Sine, 2011: 1340). We addressed this call by drawing upon the insight from classic studies of free riding and extending it to entrepreneurs' collective efforts to legitimate a new market.

In addition, this study shows how collective efforts for identity enhancement in a new market can concurrently yet differently arise between identity narratives and organizational labels. Prior work has almost exclusively focused on the coherence of either what organizations say or what they do with some highlighting the coherence of storytelling (Lounsbury & Glynn, 2001; Navis & Glynn, 2010, 2011) and others emphasizing the coherence of features and practices (Rao et al., 2003; King et al., 2011; Durand & Paoletta, 2013). However, our findings demonstrate that studying narratives and organizational labels in isolation from each other

provides an incomplete understanding of how organizations engage in the establishment of collective identities for new-market legitimation. Extant research has long conceptualized legitimation as complex combination of persuasive storytelling and visible change in attributes and structure (Meyer & Rowan, 1977; DiMaggio & Powell, 1983). For example, Suchman (1995: 586) suggests that managing legitimacy relies primarily on communication between the organization and its audiences, yet “this communication extends well beyond traditional discourse, to include a wide range of meaning-laden actions and nonverbal displays.” More recent studies have also shown that organizations facing external threats, such as opposition activism, construct various legitimating accounts encompassing both narratives and attribute dimensions (McDonnell & King, 2013; Hiatt et al., 2015). Acknowledging the variety of organizational efforts to enhance legitimacy, our study illustrates why it is important to examine the complex mixture of organizational storytelling and business names in the process of new market legitimation.

This study also contributes to identity research by examining the tension between convergence and divergence among organizations that strive to establish a collective identity. On one hand, organizations may seek to conform to the core attributes and activities of the collective identity in order to obtain legitimacy (Wry et al., 2011). On the other hand, they may seek to differentiate themselves in order to enhance their relative attractiveness and competitive advantage (Porac et al., 1995). Thus, an organization striving to establish a new collective identity often faces the problem of optimal distinctiveness (Navis & Glynn, 2010). Our findings show that the issue of achieving optimal distinctiveness can be resolved in a rather unexpected way. Instead of striking an optimal balance between sameness and difference along one dimension, organizations may make separate efforts along the two dimensions of identity



enhancing tactics with different costs, such as telling identity-congruent narratives and adopting identity-congruent labels.

This study also paves the way for a more systematic research agenda on the emergence, growth, and transformation of collective identities (Lee, Hiatt, & Lounsbury, 2015). As Wry and colleagues (2011: 459) suggest, “most extant research has focused on how external audiences such as critics and other third parties value and sanction collective identity members,” in established markets. However, few studies examine the processes behind collective-identity creation in new markets (Kennedy, 2008; Weber et al., 2008). As long as the importance of promoting nascent collective identities in new markets emerges with greater intensity than it typically does in other, more fully established markets (Aldrich & Fiol, 1994), our study provides a broad foundation that can help scholars to develop a more general theoretical understanding of how collective identities evolve over the course of market creation and development.

Relatedly, this paper contrasts with the traditional identity literature that has often taken a micro perspective by focusing on the impact of external threats on individual identities and this effect on organizational form and performance (Nelson & Irwin, 2014; Zuzul & Tripsas, 2015; Wry & York, 2016; Hampel & Tracey, 2016). While insightful, prior work has largely overlooked industry-level, macro dynamics of how firms respond to externally imposed threats (but see Glynn, Lockwood, & Raffaelli, 2015). Our paper shifts attention away from the micro-dynamics of a single organization to the understudied macro-dynamics of collective-identity establishment among many organizations. In doing so, it complements and extends recent research on organizational identity that has broadened its scope beyond the traditional conceptualization of identity as central, distinctive, and enduring (Glynn, 2008; Wry et al., 2011; Glynn & Navis, 2013).

Our results also contribute to research at the intersection of social movements and organizations by examining how opposition movements can influence new-market creation and development. While scholars have examined the impact of various external threats on new market dynamics, they have largely focused on policies (Barnett & King, 2008; Hoffman, 1999) and technological innovations (Tushman & Anderson, 1986). Extending this line of research, our study shows that opposition activism can be usefully viewed as a type of external threats that has market-wide effects. Social movement scholars have shown that “organizations are the targets of, actors in, and sites for social movement activities” (Davis, Morrill, Rao, & Soule, 2008: 389). Recent studies have broadened this research reach beyond activists’ direct engagement with individual targets to more macro-level dynamics of market creation and development (Weber et al., 2008; Sine & Lee, 2009; Pacheco et al., 2014), yet these tend to focus on the positive influence of activism on market emergence—a significant limitation given that new markets rarely arise in the exclusive presence of friendly activism. Our study complements prior research by shedding light on the mechanisms by which opposition activism can influence collective efforts to establish coherent collective identities, a critical factor for market emergence and development. Few studies have examined how opposition actors may suppress the emergence of new markets, and to our knowledge, none have examined how their efforts impact nascent collective identities.

In relation, our study makes additional contributions to social movement scholarship by extending prior work on private politics to collective organizational responses (Hiatt & Park, 2013). Though scholars have begun to examine how firms respond to targeting (Briscoe, Gupta, & Anner, 2015; McDonnell, King, & Soule, 2015; Hiatt et al., 2015; Walker, 2014), research has yet to illustrate whether and how firms may respond collectively or individually to activism that

targets multiple firms within an industry. Our findings suggest that firms facing a shared threat to their nascent market were more likely to collectively respond via similar narratives, but were more likely to individually respond via idiosyncratic business names.

Moreover, this study broadens the reach of social movement scholarship to identity research by highlighting opposition activism as an environmental condition under which organizations become more or less prone to identity differentiation and coherence. King and colleagues (2011: 257) suggest that since “not all contexts are as favorable to identity distinctiveness or identity coherence,” scholars should explore under what conditions organizations can cluster around a consistent set of shared identity claims and when they create more distinctive identities. Our study answers their call for more work in this area by showing that entrepreneurial firms in a new market do not blindly focus on the clustering of identities as a collective; instead, opposition activism can act as an external condition under which ventures engage in identity coherence and differentiation. Thus our paper offers a bridge between social movement research and identity studies, and broadly speaking, reconfirms the valuable role of social movement research in understanding new topics in neighboring areas of research.

Lastly, this study stands to contribute to the long-standing literature on free-rider problems by focusing on perceived cost difference in various tactics of collective action that can eventually lead to different levels of involvement. Previous research on free-rider problems concentrated on two key issues of group formation and individual behavior in groups, yet it provoked a rather simplistic imagery of how a rational actor relies on cost-benefit analysis to determine whether to participate in collective action (Albanese & Van Fleet, 1985; Olson, 1965; Oliver & Marwell, 1988; Hardin, 1982). In contrast, we suggest that an actor has multiple ways to contribute to the public good and will thus demonstrate varying levels of commitment to

different types of collective action simultaneously.

It is important to note that pellet ventures' identity claims of being environmentally sustainable did not alter forest-conservation groups' perceptions: they continued their targeting of the emerging market. Many forest-conservation groups called on pellet producers to, as one such organization put it, "cease all investments in biomass and drop [their] false green-wash claims about wood-based bioenergy" (Global Forest Coalition 2012). This pattern suggests that claiming identities that are in harmony with activists' values does not necessarily change activists' perspective. However, this may be due to the fact that identity narratives diverged from business names. Future research on organizational response to activism may want to examine whether the degree of congruence between verbal and nonverbal identity claims affects differently the dynamics between activists and targeted organizations.

Finally, this study has strategy implications for new ventures seeking to create a new market and rally collaboration in the face of market threats from activists. Our results show that in states where forest-conservation activism was high, there were more firms with non-identity congruent business names than those that conformed to the promoted identity. Under such conditions key audiences such as customers and regulators may find it very difficult to recognize new producers as a distinct category that creates and offers value. However, this effect was mitigated when a high number of leading identity advocates were present. Consequently, the results suggest that in order to combat the negative effects of activism on collective-identity coherence, the efforts and representation of trade-association leadership must increase in areas where activism is high in order to foster greater collective action and sameness among producers seeking to legitimate a nascent market.

## **REFERENCES**

- Afifi, A., V. Clark, S. May. 2004. *Computer-Aided Mmultivariate Analysis*. Boca Ratón, FL: Chapman Hall/CRC.
- Albert, S., & Whetten, D. 1985. Organizational Identity. In L.L. Cummings & B.M. Staw (Eds.), *Research in organizational behavior*, Vol 7: 263–295. Greenwich, CT: JAI Press.
- Albanese, R., & Van Fleet, D. 1985. Rational behavior in groups: The free-riding tendency. *Academy of Management Review*, 10: 244–255.
- Aldrich, H., & Fiol, C. 1994. Fools rush in? The institutional context of industry creation. *Academy of Management Review*, 19: 645–670.
- Anthony, C., Nelson, A., & Tripsas, M. 2016. **“Who are you?...I really wanna know”**: Product meaning and competitive positioning in the nascent synthesizer industry. Working paper: University of Oregon.
- Barnett, M., & King, A. 2008. Good fences make good neighbors: A longitudinal analysis of an industry self-regulatory institution. *Academy of Management Journal*, 51: 1150–1170.
- Barry, B., & Hardin, R. 1982. Introduction. In B. Barry & R. Hardin (Eds.), *Rational man and irrational society?*: 19–37. Beverly Hills, CA: Sage,
- Bartley, T. 2007. How foundations shape social movements: The construction of an organizational field and the rise of forest certification. *Social Problems*, 54: 229–255.
- Bartley, T. 2009. Standards for sweatshops: The power and limits of the club approach to voluntary labor standards. In A. Prakash & M. Potoski (Eds.), *Voluntary programs: A club theory perspective*: 107–131. MIT Press.
- Battilana, J., & Lee, M. 2014. Advancing research on hybrid organizing – Insights from the study of social enterprises. *Academy of Management Annals*, 8: 397–441.
- Baum, J. A. C., & Singh, J. V. 1994. Organizational niches and the dynamics of organizational mortality, *American Journal of Sociology*, 100: 346–380.
- Berger, P., & Luckmann, T. 1967. *The social construction of reality: A systematic treatise in the sociology of knowledge*. New York: Anchor.
- Bermiss, Y. S., Hallen, B. L., McDonald, R., & Pahnke, E. C. 2016. Entrepreneurial beacons: The Yale endowment, run-ups, and the growth of venture capital. *Strategic Management Journal*, forthcoming.
- Baumol, W. J., 1952. *Welfare economics and the theory of the state*. Cambridge, MA: Harvard University Press.
- Briscoe, F., Gupta, A. & Anner, M. 2015. Social activism and practice diffusion: How activist tactics affect non-targeted organizations. *Administrative Science Quarterly*, 60: 300–332.
- Briscoe, F. & Safford, S. 2008. The Nixon-in-China effect: Activism, imitation, and the institutionalization of contentious practices. *Administrative Science Quarterly*, 53: 460–491.
- Brubaker, E. R. 1975. Free ride, free revelation, or golden rule? *Journal of Law and Economics*, 18:147–161.
- Buchanan, J. 1967. Public goods in theory and practice: A note on the Minasian-Samuelson discussion. *Journal of Law and Economics*, 10: 193–197.
- Chamberlin, J. 1974. Provision of collective goods as a function of group size. *American Political Science Review*, 68: 707 –716.
- Chattopadhyay, P., Glick, W., & Huber, G. 2001. Organizational actions in response to threats and opportunities. *Academy of Management Journal*, 44: 937–955.
- Chuang, Y. T., & Baum, J. A. 2003. It's all in the name: Failure-induced learning by multiunit chains. *Administrative Science Quarterly*, 48: 33–59.
- Cyert, R. M., & March, J. G. 1963. *A behavioral theory of the firm*. Englewood Cliffs, NJ: Prentice Hall.

- Davis, G., Morrill, C., Rao, H., & Soule, S. 2008. Introduction: Social movements in organizations and markets. *Administrative Science Quarterly*, 53: 389–394.
- Deephouse, D. 1999. To be different, or to be the same? It's a question (and theory) of strategic balance. *Strategic Management Journal*, 20: 147–166.
- DiMaggio, P., & Powell, W. 1983. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociology Review*, 48: 147–160.
- Durand, R., & Paoletta, L. 2013. Category stretching: reorienting research on categories in strategy, entrepreneurship, and organization theory. *Journal of Management Studies*, 50: 1100–1123.
- Elsbach, K. 1994. Managing organizational legitimacy in the California cattle industry: The construction and effectiveness of verbal accounts. *Administrative Science Quarterly*, 39: 57–88.
- FFI/PFI (Fiber Fuels Institute/Pellet Fuels Institute). 1983-1995. Bimonthly Newsletter. Duluth, Minnesota: Fiber Fuels Institute/Pellet Fuels Institute.
- Folk, R., & Govett, R. 1992. *A handbook for small scale densified biomass fuel (pellets) manufacturing for local markets*. U.S. Dept. of Energy, Bonneville Power Admin., Portland, Oregon.
- Gamson, W. A., & Modigliani, A. 1989. Media discourse and public opinion on nuclear power: A constructionist approach. *American Journal of Sociology*, 95: 1–37.
- Global Forest Coalition. 2012. *Press release: Wood-based biomass*.
- Glynn, M. 2008. Beyond constraint: How institutions enable identities. In R. Greenwood, C. Oliver, R. Suddaby, & K. Sahlin-Andersson (Eds.), *The SAGE handbook of organizational institutionalism*: 413–430. London: Sage.
- Glynn, M. A., & Abzug, R. 1998. Isomorphism and competitive differentiation in the organizational name game. In J. Baum (Ed.), *Advances in Strategic Management*, 15: 105-128. Greenwich, CT: JAI Press.
- Glynn, M. A., & Abzug, R. 2002. Institutionalizing identity: Symbolic isomorphism and organizational names. *Academy of Management Journal*, 45: 267–280.
- Glynn, M., Lockwood, C., & Raffaelli, R. 2015. Staying the same while changing: Organizational identity in the face of environmental challenges. In R. Henderson, R. Gulati, & M. Tushman (Eds.), *Leading sustainable change*. New York, NY: Oxford University Press.
- Glynn, M. A., & Marquis, C. 2006. Fred's bank: How institutional norms and individual preferences legitimate organizational names. In A. Rafaeli & M. G. Pratt (Eds.), *Artifacts and organizations. Beyond mere symbolism*: 223–239. Mahwah, NJ: Lawrence Erlbaum Associates.
- Glynn, M., & Navis, C. 2013. Categories, identities, and cultural classification: Moving beyond a model of categorical constraint. *Journal of Management Studies*, 50: 1124–1137.
- Goffman, E. 1959. *The Presentation of Self in Everyday Life*. Doubleday & Co., Garden City. New York.
- Granqvist, N., Grodal, S., & Woolley, J. L. 2013. Hedging your bets: Explaining executives' market labeling strategies in nanotechnology. *Organization Science*, 24: 395–413.
- Groves, T., & Ledyard, J. 1977. Optimal allocation of public goods: A solution to the free rider problem. *Econometrica*, 45: 783-809.
- Grodal, S., Gotsopoulos, A., & Suarez, F. 2015. The coevolution of technologies and categories during industry emergence. *Academy of Management Review*, 40: 423–445.
- Hampel, C., & Tracey, P. 2016. How organizations move from stigma to legitimacy: The case of Cook's travel agency in Victorian Britain. *Academy of Management Journal*, forthcoming
- Hardin, R. 1982. *Collective action: Resources for the Future*. Baltimore: Johns Hopkins University

- Press.
- Hiatt, S., Grandy, J., & Lee, B. 2015. Organizational responses to public and private politics: An analysis of climate change activists and U.S. oil and gas firms. *Organization Science*, 26: 1769–1786.
- Hiatt, S., & Park, S. 2013. Lords of the harvest: Regulatory-agency decision making in the approval of genetically modified organisms. *Academy of Management Journal*, 56: 923–944.
- Hiatt, S., Sine, W., & Tolbert, P. 2009. From Pabst to Pepsi: The deinstitutionalization of social practices and the creation of entrepreneurial opportunities. *Administrative Science Quarterly*, 54: 635–667.
- Hoffman, A. 1999. Institutional evolution and change: Environmentalism and the U.S. chemical industry. *Academy of Management Journal*, 42: 351–371.
- Hsu, G., & Hannan, M. 2005. Identities, genres, and organizational forms. *Organization Science*, 16: 474–490.
- Ingram, P. 1996. Organizational form as a solution to the problem of credible commitment: The evolution of naming strategies among US hotel chains, 1896–1980. *Strategic Management Journal*, 17(S1): 85–98.
- Jenkins, J. C. 1983. Resource mobilization theory and the study of social movements. *Annual Review of Sociology*, 9: 527–553.
- Kennedy, M. T. 2008. Getting counted: markets, media and reality. *American Sociological Review*, 73: 270–295.
- Kennedy, M. T., & Fiss, P. 2009. Institutionalization, framing, and diffusion: The logic of TQM adoption and implementation decisions among U.S. hospitals. *Academy of Management Journal*, 52: 897–918.
- Khaire, M., & Wadhvani, R. 2010. Changing landscapes: The construction of meaning and value in a new market category—Modern Indian art. *Academy of Management Journal*, 53: 1281–1304.
- King, A., & Lenox, M. 2000. Industry self-regulation without sanctions: The chemical industry's responsible care program. *Academy of Management Journal*, 43: 698–716.
- King, B., Clemens, E., & Fry, M. 2011. Identity realization and organizational forms: Differentiation and consolidation of identities among Arizona's charter schools. *Organization Science*, 22: 554–572.
- Kraatz, M., & Block, E. 2008. Organizational implications of institutional pluralism. In R. Greenwood, C. Oliver, K. Sahlin-Andersson, & R. Suddaby (Eds.), *The SAGE Handbook of Organizational Institutionalism*: 241–275. London: Sage.
- Lee, B., Hiatt, S., & Lounsbury, M. 2015. *Market mediators and the tradeoffs of legitimacy-seeking behaviors in a nascent category*. Available at SSRN: <http://ssrn.com/abstract=2615964>.
- Lee, M. 2014. Mission and markets? The viability of hybrid social ventures. *Academy of Management Proceedings*. Academy of Management, 13958.
- Lee, P. M. 2001. What's in name.com?: The effect of '.com' name changes on stock prices and trading activity. *Strategic Management Journal*, 22: 793–804.
- Lounsbury, M., & Glynn, M. 2001. Cultural entrepreneurship: Stories, legitimacy, and the acquisition of resources. *Strategic Management Journal*, 22: 545–564.
- Malmshemer, R., Keele, D., & Floyd, D. 2004. National forest litigation in the US courts of appeals. *Journal of Forestry*, 102(2): 20–25.
- Marquis, C., & Lounsbury, M. 2007. Vive la résistance: Competing logics and the consolidation of U.S. community banking. *Academy of Management Journal*, 50: 799–820.
- Marwell, G., & Ames, R. 1979. Experiments on the provision of public goods: Resources, interest,

- group size, and the free-rider problem. *American Journal of Sociology*, 84: 1335–1360.
- Marwell, G., & Oliver, P. 1993. *The critical mass in collective action*. New York: Cambridge University Press.
- McDonnell, M., & King, B. 2013. Keeping up appearances: Reputational threat and impression management after social movement boycotts. *Administrative Science Quarterly*, 58: 387–419.
- McDonnell, M., King, B., & Soule, S. 2015. A dynamic process model of private politics activist targeting and corporate receptivity to social challenges. *American Sociological Review* 80: 654–678.
- Meyer, J. W., & Rowan, B. 1977. Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83: 340–363.
- Minasian, J. R. 1967. Public goods in theory and practice revisited. *Journal of Law and Economics*, 10: 205–207.
- Navis, C., & Glynn, M. 2010. How new market categories emerge: Temporal dynamics of legitimacy, identity, and entrepreneurship in satellite radio, 1990–2005. *Administrative Science Quarterly*, 55: 439–471.
- Navis, C., & Glynn, M. 2011. Legitimate distinctiveness and the entrepreneurial identity: Influence on investor judgments of new venture plausibility. *Academy of Management Review*, 36: 479–499.
- Nelson, A. & Irwin, J. 2014. “Defining what we do—all over again”: Occupational identity, technological change, and the librarian/internet-search relationship. *Academy of Management Journal*, 57: 892–928.
- Oliver, P. & Marwell, G. 1988. The paradox of group size in collective action: A theory of the critical mass. II. *American Sociological Review*, 53: 1–8.
- Oliver, P., Marwell, G., & Teixeira, R. 1985. A theory of the critical mass. I. Interdependence, group heterogeneity, and the production of collective action. *American Journal of Sociology*, 91: 522–556.
- Olson, M. 1965. *The Logic of Collective Action: Public Goods and the Theory of Groups*. Harvard University Press, Cambridge, MA.
- Ostrom, E. 2015. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press, New York: NY.
- Pacheco, D., York, J., & Hargrave, T. 2014. The co-evolution of industries, social movements, and institutions: The case of wind power. *Organization Science*, 25: 1609–1632.
- Porac, J. F., Thomas, H., Wilson, F., Paton, D., & Kanfer, A. 1995. Rivalry and the industry model of Scottish knitwear producers. *Administrative Science Quarterly*, 40: 203–227.
- Potoski, M., & Prakash, A. 2004. The regulation dilemma: Cooperation and conflict in environmental governance. *Public Administration Review*, 64: 152–163.
- Potoski, M., & Prakash, A. 2013. Green clubs: Collective action and voluntary environmental programs. *Annual Review of Political Science*, 16: 399–419.
- Rao, H., Monin, P., & Durand, R. 2003. Institutional change in Toque Ville: Nouvelle cuisine as an identity movement in French gastronomy. *American Journal of Sociology*, 108: 795–843.
- Rindova, V., Dalpiaz, E., & Ravasi, D. 2011. A cultural quest: A study of organizational use of new cultural resources in strategy formation. *Organization Science*, 22: 413–431.
- Romanelli, E., & Khessina, O. 2005. Regional industrial identity: Cluster configurations and economic development. *Organization Science*, 16: 344–358.
- Samuelson, P. A. 1954. The pure theory of public expenditure. *Review of Economics and Statistics*, 36: 387–389.



- Sandler, T. 1992. *Collective action: Theory and applications*, Vol. 4. Ann Arbor: University of Michigan Press.
- Santos, F., & Eisenhardt, K. 2009. Constructing markets and shaping boundaries: Entrepreneurial power in nascent fields. *Academy of Management Journal*, 52: 643–671.
- Shapira, Z. 1986. *Risk taking*. New York: Russel Sage Foundation.
- Sine, W., & Lee, B. 2009. Tilting at windmills? The environmental movement and the emergence of the U.S. wind energy sector. *Administrative Science Quarterly*, 54: 123–155.
- Spelter, H., & Toth, D. 2009. *North America's Wood Pellet Sector*. Research Paper FPL-RP-656. Laboratory UFP, Madison, USA.
- Suchman, M. 1995. Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, 20: 571–610.
- Tolbert, P., David, R., & Sine, W. 2011. Studying choice and change: The intersection of institutional theory and entrepreneurship research. *Organization Science*, 22: 1332-1344.
- Tracey, P., & Phillips, N. 2016. Managing the consequences of organizational stigmatization: Identity work in a social enterprise. *Academy of Management Journal*, forthcoming.
- Tracey, P., Phillips, N. & Jarvis, O. 2011. Bridging institutional entrepreneurship and the creation of new organizational forms: A multilevel model. *Organization Science*, 22: 60-80.
- Tushman, M. & Anderson, P. 1986. Technological discontinuities and organizational environments. *Administrative Science Quarterly*, 31: 439-465.
- United States Brewers' Association. 1909. *The Yearbook of the United States Brewers' Association*. New York: the Association.
- Vaara, E., & Monin, P. 2010. A recursive perspective on discursive legitimation and organizational action in mergers and acquisitions. *Organization Science*, 21: 3–22.
- Walker, E. 2014. *Grassroots for Hire: Public Affairs Consultants in American Democracy*. Cambridge University Press, Cambridge, UK.
- Weber, K., Rao, H., & Thomas, L. 2009. From streets to suites: how the anti-biotech movement penetrated German pharmaceutical firms. *American Sociology Review*, 74: 106–127.
- Weber, K., Heinze, K., & DeSoucey, M. 2008. Forage for thought: mobilizing codes in the movement for grass-fed meat and dairy products. *Administrative Science Quarterly*, 53: 529–567.
- Wry, T., Lounsbury, M., & Glynn, M. 2011. Legitimizing nascent collective identities: Coordinating cultural entrepreneurship. *Organization Science*, 22: 449–463.
- Wry, T., & York, J. 2016. An identity based approach to social enterprise. *Academy of Management Review*, forthcoming.
- York, J., Hargrave, T., & Pacheco, D. 2015. Converging winds: Logic Hybridization in the Colorado wind energy field. *Academy of Management Journal*, forthcoming.
- York, J., & Lenox, M. 2014. Exploring the sociocultural determinants of de novo versus de alio entry in emerging industries. *Strategic Management Journal*, 35: 1930–1951.
- Yue, Q. 2016. The great and the small: The impact of collective action on the evolution of interlock networks after the Panic of 1907, *American Sociological Review*, 81: 374–395.
- Zellner, A. 1962. An efficient method of estimating seemingly unrelated regressions and tests for aggregation bias. *Journal of the American Statistical Association*, 57: 348-368.
- Zuzul, T., & Edmondson, A. 2015. *The advocacy trap: When leaders' legitimacy building inhibits organizational learning*. Working Paper no. 11–099, Harvard Business School.
- Zuzul, T., & Tripsas, M. 2015. *Founder identity and firm flexibility in nascent industries*. Working Paper, London Business School.

**TABLE 1**  
**Descriptive Statistics and Bivariate Correlations**

<b>Variables</b>	<b>Mean</b>	<b>St. Dev</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>1</b> Similar identity narratives	0.09	0.22	1					
<b>2</b> Similar venture names	0.10	0.25	0.06	1				
<b>3</b> External threats (lawsuits)	0.23	0.63	0.19	0.03	1			
<b>4</b> Leading identity advocates	0.13	0.38	0.14	0.15	0.24	1		
<b>5</b> Group size	0.80	1.59	0.14	0.26	0.41	0.45	1	
<b>6</b> Profitability	95.36	39.12	0.12	0.07	0.09	0.16	0.14	1
<b>7</b> State timber volume (logged)	8.82	1.91	0.07	0.15	0.28	0.17	0.32	-0.03
<b>8</b> Diseased forests / 1000	2.84	10.44	0.02	-0.03	-0.08	-0.07	-0.09	-0.35
<b>9</b> Natural gas consumption per capita	0.08	0.09	-0.01	-0.05	-0.03	-0.08	-0.10	0.02
<b>10</b> Winter temperature	35.44	11.52	-0.02	0.11	-0.01	-0.11	-0.15	-0.03
<b>11</b> State population (logged)	14.94	1.03	0.08	0.15	0.11	0.06	0.09	0.08
<b>12</b> Gross state product per capita	0.04	0.01	0.13	-0.09	0.08	0.07	-0.02	0.29

	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
<b>7</b>	1				
<b>8</b>	0.17	1			
<b>9</b>	0.11	0.06	1		
<b>10</b>	-0.01	0.26	-0.07	1	
<b>11</b>	0.44	0.10	-0.12	0.32	1
<b>12</b>	-0.46	-0.18	0.17	-0.02	-0.15

**TABLE 2**  
**Multivariate Regression Analysis of Coherence of Identity Narratives and Business Names**

Variables	Model 1		Model 2		Model 3		Model 4	
	Similar identity narratives	Similar business names	Similar identity narratives	Similar business names	Similar identity narratives	Similar business names	Similar identity narratives	Similar business names
External threats (lawsuits)			0.03* (0.01)	-0.06*** (0.01)	0.05** (0.02)	-0.06*** (0.02)	0.04* (0.02)	-0.08*** (0.02)
External threats X Group size					-0.01* (0.00)	-0.00 (0.00)	-0.01** (0.01)	-0.02** (0.01)
External threats X Leading identity advocates							0.05* (0.02)	0.12*** (0.02)
Leading identity advocates	0.04* (0.02)	0.06** (0.02)	0.03+ (0.02)	0.07*** (0.02)	0.03+ (0.02)	0.07*** (0.02)	0.01 (0.02)	0.02 (0.02)
Group size	0.01* (0.00)	0.05*** (0.01)	0.01* (0.00)	0.05*** (0.01)	0.02** (0.01)	0.05*** (0.01)	0.02*** (0.01)	0.06*** (0.01)
Profitability	-0.00 (0.00)	0.00* (0.00)	-0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	0.00+ (0.00)
State timber volume (logged)	0.14*** (0.04)	0.05 (0.04)	0.14*** (0.04)	0.05 (0.04)	0.14*** (0.04)	0.04 (0.04)	0.14*** (0.04)	0.05 (0.04)
Diseased forests	0.00*** (0.00)	-0.00+ (0.00)	0.00*** (0.00)	-0.00* (0.00)	0.00*** (0.00)	-0.00* (0.00)	0.00*** (0.00)	-0.00* (0.00)
Natural gas consumption per capita	0.22 (0.17)	-0.39* (0.18)	0.20 (0.17)	-0.35+ (0.18)	0.21 (0.17)	-0.35+ (0.18)	0.22 (0.17)	-0.34+ (0.18)
Winter temperature	-0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)
State population (logged)	0.31*** (0.05)	-0.00 (0.05)	0.27*** (0.05)	0.09 (0.05)	0.27*** (0.05)	0.09 (0.05)	0.26*** (0.05)	0.07 (0.05)
Gross state product per capita	1.02 (0.84)	-3.69*** (0.89)	0.81 (0.85)	-3.22*** (0.89)	0.85 (0.84)	-3.21*** (0.89)	0.89 (0.84)	-3.13*** (0.88)
Constant	-6.16*** (0.73)	-0.30 (0.78)	-5.56*** (0.78)	-1.63* (0.82)	-5.40*** (0.78)	-1.59+ (0.82)	-5.36*** (0.78)	-1.47+ (0.82)
State-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of Observations	1326	1326	1326	1326	1326	1326	1326	1326
F statistic	4.06***	13.03***	4.10***	13.41***	4.11***	13.19***	4.12***	13.59***

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

**FIGURES 1-4**  
**Graphical Presentation of Interaction Effects**

Figure 1. Moderating effects of group size on the relationship between external threats and similarity (identity-congruent narratives)

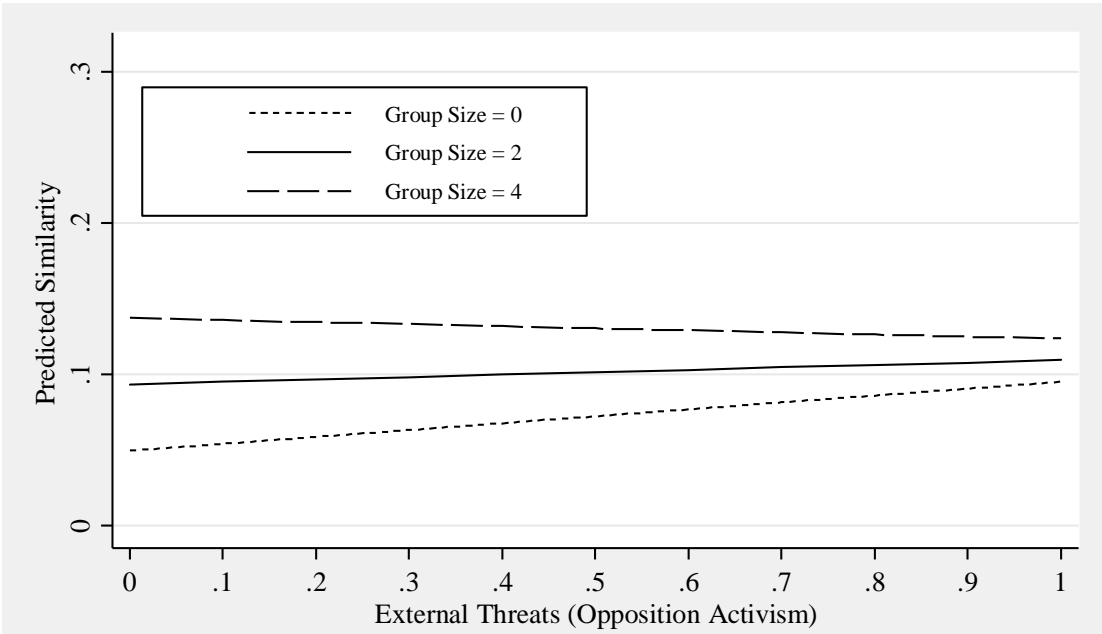


Figure 2. Moderating effects of group size on the relationship between external threats and similarity (identity-congruent names)

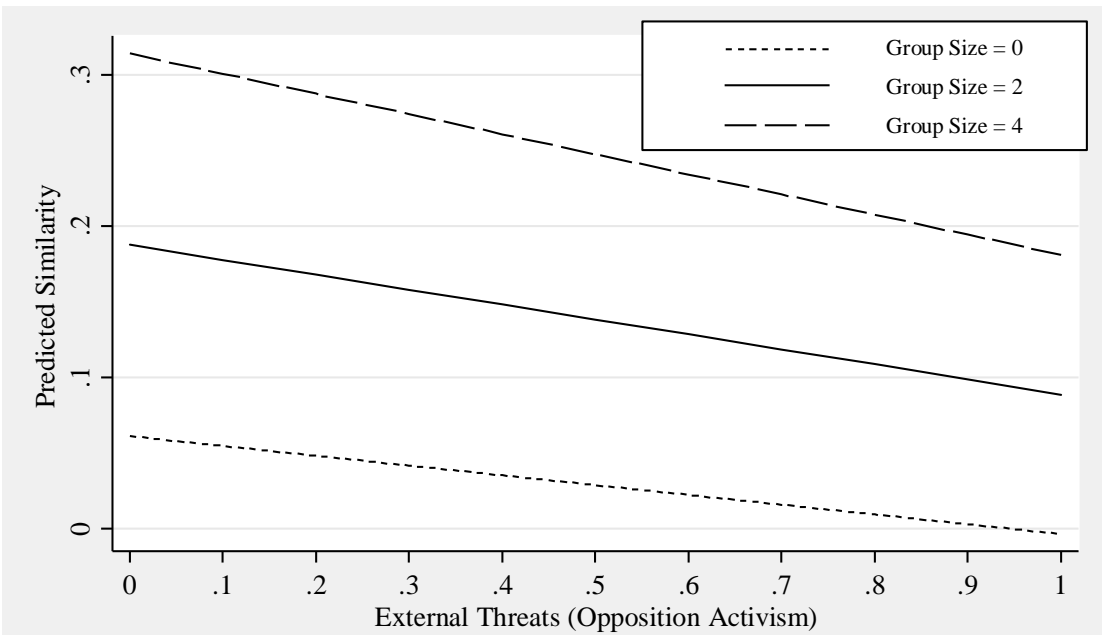


Figure 3. Moderating effects of identity advocates on the relationship between external threats and similarity (identity-congruent narratives)

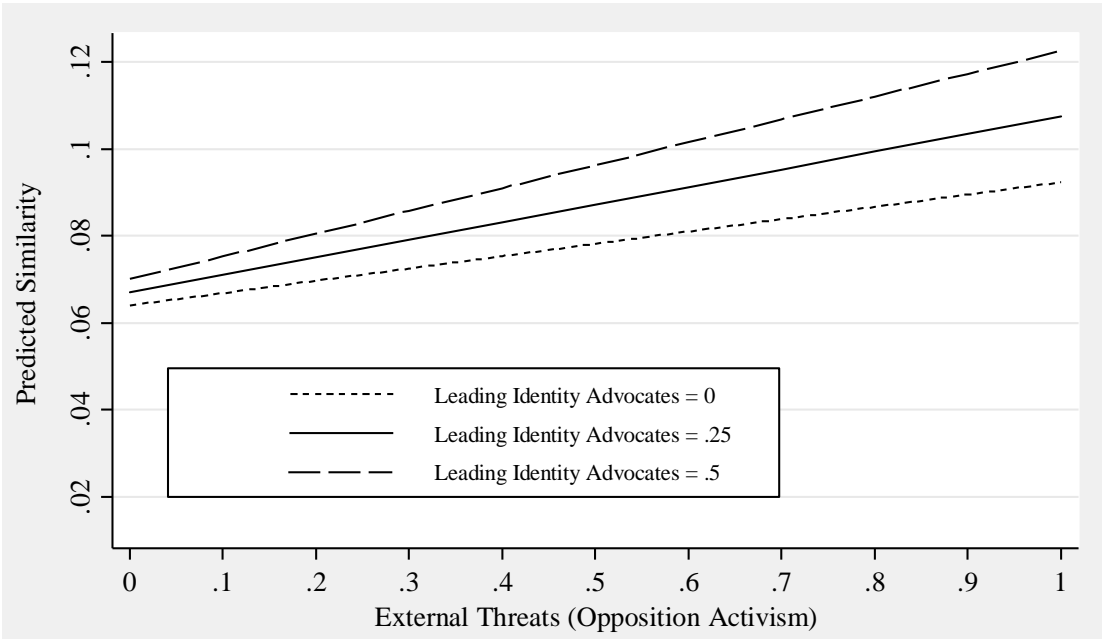


Figure 4. Moderating effects of identity advocates on the relationship between external threats and similarity (identity-congruent names)

